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09/604,174

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John L. Manfredelli

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WOODCOCK WASHBURN LLP (MICROSOFT CORPORATION)

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EXAMINER

BROWN, CHRISTOPHER J

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/604,174

Applicant(s)

MANFERDELLI ET AL.

Examiner

CHRISTOPHER J. BROWN

Art Unit

2134

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/11/2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 12/11/2007 have been fully considered but they are not persuasive.

The applicant argues that the USC 102 rejection via Aucsmith US 5,892,899 is not persuasive because Aucsmith still relies on the key albeit a separated and dispersed key.

The examiner argues that Aucsmith is using code that performs functions to achieve the results a key would bring but is not relying on a whole or part of said key. Aucsmith may state that it is using secret "subparts". However Aucsmith appears to be doing what the applicant is also doing. It is unclear to the examiner how the computer program is able to perform the actions independent of "any part of said cryptographic key" when it is employing "key attributes" taken from said cryptographic key.

Page 19 of the instant specification states that "key attributes" are taken from analyzing a key and a new code is generated to produce those actions. The examiner asserts that the applicant is merely separating the functions of the key into several actions taken by code. However, the original key is still needed to produce said actions in new code.

Aucsmith gives the example that the code secret "8" (key) is decompiled into several other functions. Thus the same result is achieved, but the original "8" is not relied upon (Col 3, lines 60-65, Fig 1).

The examiner encourages the applicant to explain how taking key attributes and coding them into functions is different from breaking a key down into elements and coding them into functions. In the alternative the examiner encourages the applicant to further amend claim one to more clearly and specifically define the instant invention.

The action below is substantially similar to the previous office action:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 8, 10, 12, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Aucsmith US 5,892,899.

As per claim 1, Aucsmith teaches identifying a set of actions that are performed in the course of using a cryptographic algorithm to apply a cryptographic key to said first data (a security sensitive program that uses a secret "S" to implement a

cryptographic function) (Col 4 lines 1-15). Aucsmith teaches generating a first set of computer-executable instructions which includes instructions to perform said actions (generates partitioned subparts) (Col 3 lines 48-57). Aucsmith teaches including said first set of computer-executable instructions in said computer program, wherein said computer program does not require access said cryptographic key (subprogram generator for generating subprograms to implement a security sensitive program that does not require access to a secret, secret data is partitioned, thus eliminating secret data) (Col 4 lines 3-5).

As per claim 2, Aucsmith teaches said cryptographic algorithm is a public/private-key algorithm (asymmetric key scheme) (Col 4 lines 10-16).

As per claims 8, 10 Aucsmith teaches generating a diversionary second set of computer-executable instructions which perform one or more second actions; and including said second set of computer-executable instructions in said computer program (tasks to further obscure the true nature of the program, these tasks have no purpose) (Col 4 lines 15-20).

As per claim 12 Aucsmith teaches reorganizing at least some code contained in the program (obfuscated by dividing and processing into a number of obfuscated subprograms) (Col 5 lines 18-22).

As per claim 21 Aucsmith teaches a set of instructions to perform claim 1 (subprogram generator) (Col 4 lines 20-25).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 and 7, 14-16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aucsmith US 5,892,899 in view of Granger US 6,643,775.

As per claim 3 Aucsmith teaches secret and a asymmetric algorithm, but does not teach that the secret is a private key of an asymmetric key pair.

Granger teaches that the secret is a private key of an asymmetric key pair (key in an asymmetric algorithm) (Col 10 lines 28-38).

It would have been obvious to one of ordinary skill in the art to use the asymmetric key of Granger as the secret in Aucsmith because it is beneficial to hide keys from software pirates.

As per claim 7 Aucsmith fails to teach pseudo-randomly generating a number, wherein said first set of computer-executable instructions is based on said number. Granger teaches pseudo-randomly generating a number, wherein said first set of computer-executable instructions is based on said number (during encryption multiplies by random number R) (Col 12 line 55).

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As per claim 14, Aucsmith fails to teach encrypting a portion of instructions.

Granger teaches encrypting at least a portion of said first set of computer-executable instructions; and creating a second set of computer-executable instructions which decrypts said portion (encrypts data table, decrypts line by line when needed) (Col 7 lines 8-20).

As per claim 15, Aucsmith does not specify source level code.

Granger teaches the program is written in source and compiled, (high level language, then compiled) (Col 7 lines 53-59).

As per claim 16, Aucsmith does not teach postprocessing.

Granger teaches the act of postprocessing the compiled instructions after said compiling act, wherein said postprocessing act comprises one or more of the following: encrypting at least a portion of the compiled instructions, and hashing at least a portion of the compiled instructions (encrypting after compiling) (Col 15 lines 18-21).

Claim 4-6, 17, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aucsmith US 5,892,899 in view of Maytal US 6,715,079.

As per claims 4, 5, and 6 Aucsmith teaches a secret as second data but fails to teach the secret in some way identifies or relates to a computing device on which said computer program runs, and wherein said first set of computer-executable instructions is based on said second data.

Maytal teaches using a second data that identifies a computing device on which said computer program runs and wherein said first set of computer executable instructions is based on said second data (uses the CPUID as the secret/second data that is incorporated into computer executable instructions) (Col 10 lines 25-35). It is well known that proper execution depends on retrieval of second data (proper encryption/decryption needs correct operations based on incorporated data).

It would have been obvious to one of ordinary skill in the art to use the CPUID of Maytal with the program of Aucsmith because it will prevent illegal copying and use without the appropriate hardware.

As per claims 17 and 18, Aucsmith does not teach receiving, from a computing device, a request for said computer program via a network; and providing said computer program to said computer device via said network where the network is the internet.

Maytal teaches receiving, from a computing device, a request for said computer program via a network; and providing said computer program to said computer device via said network where the network is the internet.(CPU's submitting data to request a customized computer program may be downloaded to the computer

over the Internet) (Col 10 lines 25-35).

Claims 9, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aucsmith US 5,892,899 in view of Matsui US 2002/0178412.

As per claims 9, and 20 Aucsmith teaches diversionary code (Col 4 lines 15-20).

Aucsmith does not teach retrieving instructions from a database.

Matsui teaches retrieving instructions from a database (retrieving program from external database and compiling it) [047].

It would have been obvious to one of ordinary skill in the art to modify Aucsmith with the database of Matsui because it can be retrievable at any terminal with network access.

Claim 11, is rejected under 35 U.S.C. 103(a) as being unpatentable over Aucsmith US 5,892,899 in view of Barton US 5,912,972

As per claim 11, Aucsmith fails to teach a second set of computer-executable instructions which detects modification or deletion of at least a portion of code contained in said computer program, and which restores said portion if said portion has been deleted or modified.

Barton teaches error detection and correction, (Col 9 lines 9-16).

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It would have been obvious to one of ordinary skill in the art to add the error correction to the system of Aucsmith because the error correction would maintain the data and prevent errors.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aucsmith US 5,892,899 in view of Mirov 6,138,236.

As per claim 13 Aucsmith teaches generating instructions in a computer program. Aucsmith does not teach delimiting or hashing.

Mirov teaches delimiting a segment of at least some code contained in a program (micro code) (Fig 1). Mirov teaches obtaining a first hash of the code (verification hash) Mirov teaches obtaining a second hash (data hash) and comparing the first hash with the second hash (comparing data hash with verification hash to determine authenticity)(Fig 4 Col 4 lines 8-26).

It would have been obvious to one of ordinary skill in the art to use the authentication of Mirov with the program of Aucsmith because it prevents the use of code that may have been tampered with.

Claims 19, is rejected under 35 U.S.C. 103(a) as being unpatentable over Aucsmith US 5,892,899 in view of Maytal US 6,715,079 in view of Frasier US 5,758,293

As per claims 19, Aucsmith does not disclose downloading a program over the Internet.

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Maytal teaches CPU's submitting data to request a customized computer program may be downloaded to the computer over the Internet, (Col 10 lines 25-35).

Maytal does not specify the timetable for downloading.

Frasier teaches that data is downloaded contemporaneously with a request for said data, (Col 1 lines 17-23). It would have been obvious to use the contemporaneous download of Frasier with Maytal because it allows for the quick transfer of data.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **CHRISTOPHER J. BROWN** whose telephone number is (571)272-3833. The examiner can normally be reached on 8:30-6:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kambiz Zand can be reached on (571)272-3811. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. J. B./
Art Unit 2134

3/2/08

/Kambiz Zand/
Supervisory Patent Examiner, Art Unit 2134